

Date: Friday, 12/09/2008 9:00:21 AM
 User: Julie Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 206L AFT X-TUBE
Job Number : 41999	
Estimate Number : 13222	
P.O. Number :	Part Number : D206667203TRN
This Issue : 12/09/2008 S.O. No. :	Drawing Number : D206-667-243 REVB
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : CROSSTUBES	Drawing Revision : B
Previous Run : 41621	Material :
Written By :	Due Date : 19/09/2008 Qty: 1 Um: Each
Checked & Approved By : <u>JD 08.9.12</u>	
Comment : Est Rev:A 08-03-06 new issue DD verified by:ec Est Rev B 08.04.02 Removed polish EC verified by: DD	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6004115	Crosstube Material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6004-115 Crosstube

Check OD = 2.500"; ID = 1.800"

B34 685

a.m 08.09.230

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs

MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA089

2-Turn first side as per Folio FA089

3-File down transition lines smooth.

a.m 08.09.230

3.0	QC1	INSPECT ALL DIM TO DIM SHEET
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Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs

INSPECT ALL DIM TO DIM SHEET

a.m 08.09.230

4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs

MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA089

a.m 08.09.230

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/09/2008 9:00:21 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 206L AFT X-TUBE

Job Number: 41999

Part Number: D206667203TRN

Job Number:



Seq. #:

Machine Or Operation:

Description :

2-File down transition lines smooth.

3-Remove sand and plugs

Am 08.09.23 @

5.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs
INSPECT ALL DIM TO DIM SHEET

Am 08.09.23 @

6.0

QC8

SECOND CHECK



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs
SECOND CHECK

AWM 8-9-24

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs
HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1

AWM 8-9-24

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs
INSPECT POWDER COAT/CHEMICAL CONVERSION

M 7-9-24

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs
PACKAGING RESOURCE #1
Identify and Stock in kanban rack
Location: *X-TUBE CELL*

AWM 8-9-24

10.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs
FINAL INSPECTION/W/O RELEASE

08/09/2008

Job Completion



W 08.09.25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 4999
Description: Crosstube Assembly		Part Number: D206-667-243
Inspection Dwg: D206-667-243 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.493	/			
	2.018	+0.005/-0.000	2.023	/			
	2.079	+0.005/-0.000	2.084	/			
	2.145	+0.005/-0.000	2.150	/			
	2.209	+0.005/-0.000	2.214	/			
	2.287	+0.005/-0.000	2.292	/			
	2.363	+0.005/-0.000	2.368	/			
	2.433	+0.005/-0.000	2.438	/			
	0.200	+/-0.010	0.200	/			
	0.500 x 30°	+/-0.010	0.500x30°	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.438	+/-0.030	4.438	/			
SIDE B	104.91	+/-0.020	104.910	/			
	2.490	+0.005/-0.000	2.493	/			
	2.018	+0.005/-0.000	2.023	/			
	2.079	+0.005/-0.000	2.084	/			
	2.145	+0.005/-0.000	2.150	/			
	2.209	+0.005/-0.000	2.214	/			
	2.287	+0.005/-0.000	2.292	/			
	2.363	+0.005/-0.000	2.368	/			
	2.433	+0.005/-0.000	2.438	/			
	0.200	+/-0.010	0.200	/			
	0.500 x 30°	+/-0.010	0.500x30°	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.438	+/-0.030	4.438	/			

Measured by: A.M	Audited by: ALWM	Prototype Approval: N/A
Date: 08.09.23	Date: 8.9.24	Date: N/A

Rev	Date	Change	Revised by	Approved
A	06.09.01	New Issue (P/O D206-667-203)	KJ/JLM	

DART

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED # DS	APPROVED # DS	DRAWING NO. D206-667-243	REV. B SHEET 1 OF 3
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (206L HIGH AFT)	SCALE NTS
A	00.11.17	NEW ISSUE	
B	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	

RELEASED
05-07-26**UNDER REVIEW**
06.08.10
re draw detail F
07.09.16

Qty	Part Number	Description
X	D206-667-243	CROSSTUBE ASSEMBLY
1	D6004-115	CROSSTUBE
2	D2856-400-773	ABRASION STRIP
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
2	D2892-1	SUPPORT
14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
4	MS21920-22	CLAMP

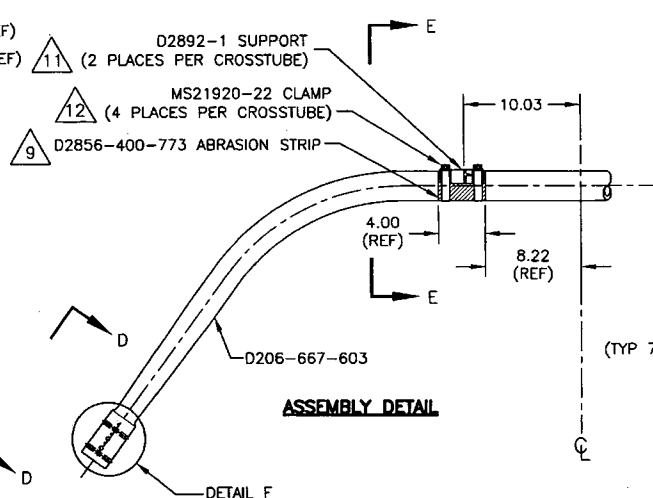
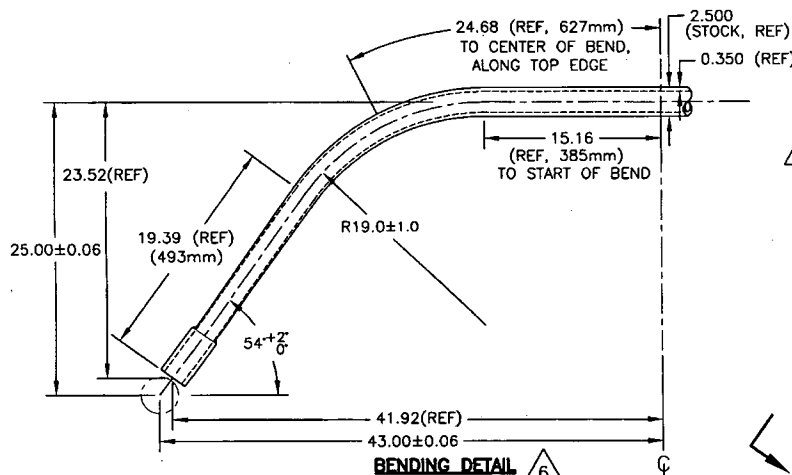
GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91 ± 0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2892-1 SUPPORT, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) IT IS OPTIONAL TO SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX-241/291 SEALANT.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

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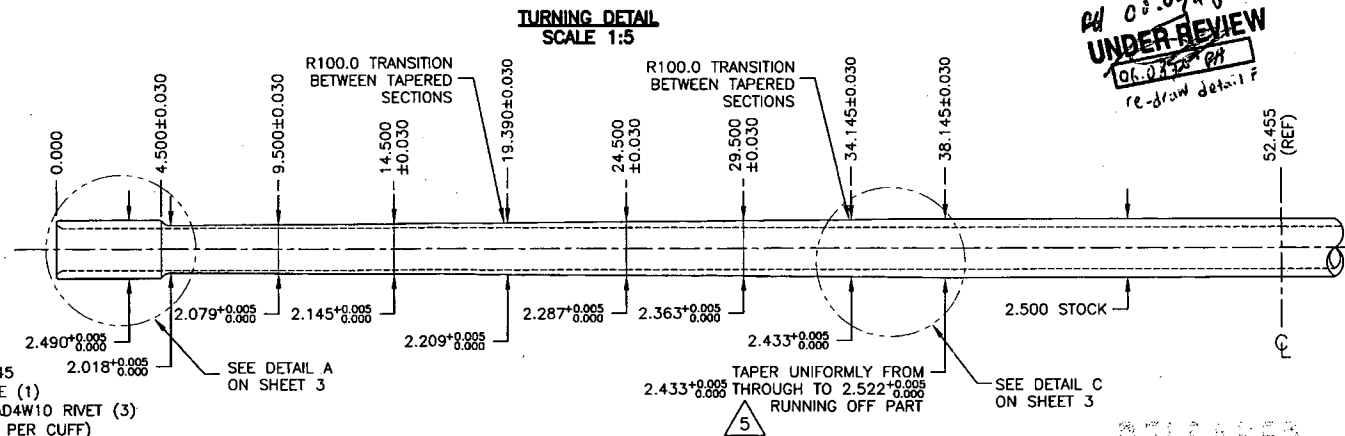
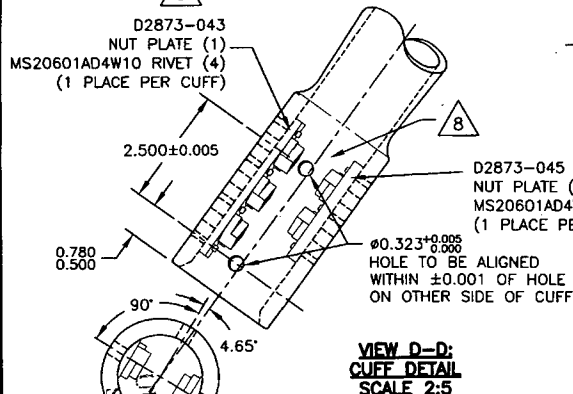
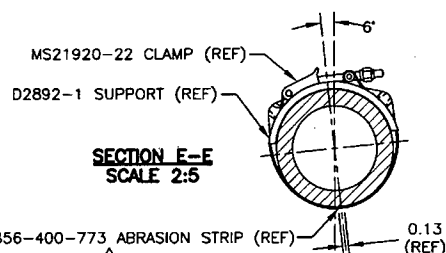
△ B $\varnothing 0.323^{+0.005}_{-0.000}$
(TYP 5 PLACES PER CUFF)
HOLE TO BE ALIGNED WITHIN ± 0.001
OF HOLE ON OTHER SIDE OF CUFF

PILOT $\varnothing 0.128$
C'SINK $\varnothing 0.225 \times 100'$
(TYP 7 PLACES PER CUFF)

FWD SIDE ONLY

DETAIL F
SCALE 2:5

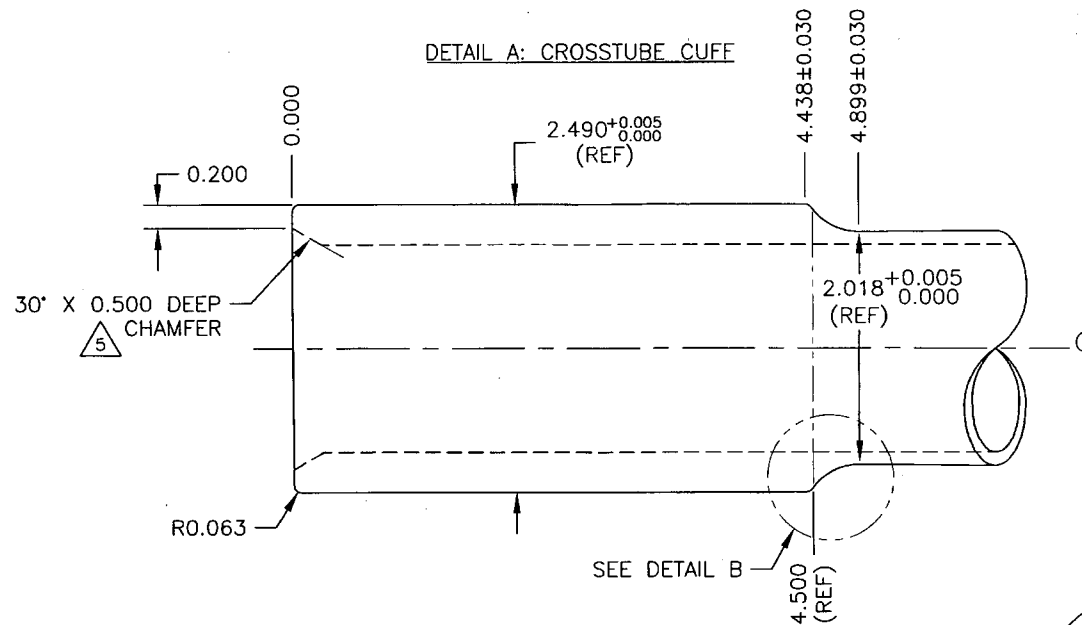
PH 01.09.16
UNDER REVIEW
OK 07.26 PH
re-draw detail F



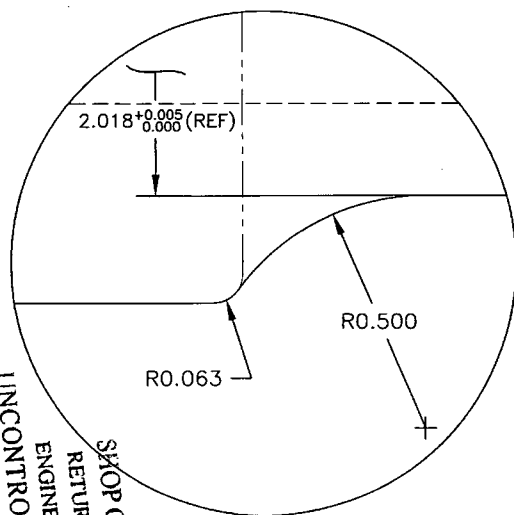
DESIGN PH		DRAWN BY PH		DART DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA	
CHECKED DS		APPROVED DS		DRAWING NO. D206-667-243	REV. B
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (206L HIGH AFT)		SHEET 2 OF 3	
				SCALE 1:10	

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DETAIL A: CROSSTUBE CUFF

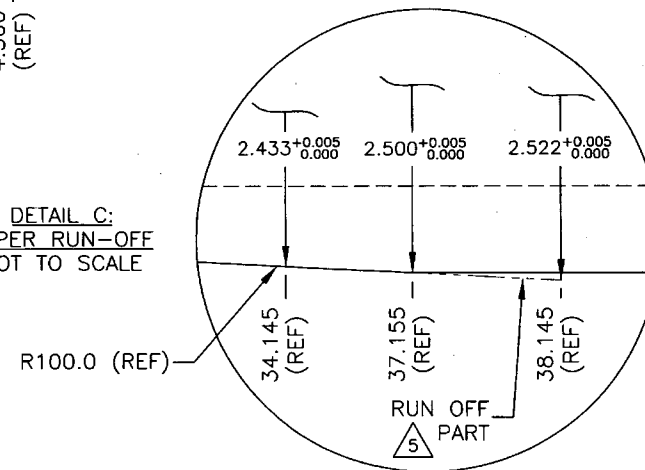


05.07.26
06.08.10
UNDER REVIEW
detail F



DETAIL B: CUFF
TRANSITION
SCALE 4:1

DETAIL C: TAPER RUN-OFF NOT TO SCALE



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DESIGN PH	DRAWN BY PH	DART DART AEROSPACE LTD. HAMPSHIRE, ONTARIO, CANADA	REV. B
CHECKED DS	APPROVED DS	DRAWING NO. D206-667-243	SHEET 3 OF 3
DATE 05.07.26	TITLE CROSSTUBE ASS'Y (206L HIGH AFT)	SCALE 1:1	